Petr Stepanov

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> Ph.D. graduate in physics with 5+ years of expertise in the user interface (UI) and user experience (UX) design. Strong web application and desktop software development skills.

Work Experience

Full-Stack Developer
Sticker Store LLC, Portland, OR.   *Feb 2023 - Current*

- Designed and programmed online e-commerce store (Figma, HTML, CSS, Bootstrap, SASS, Express.JS, EJS, Node.js).
- Improved the Google PageSpeed Insights metrics (CLS, LCP) up to 97%.
- Set up low frequency keyword campaign on Google Analytics.
- Exported local product database to Google Merchant.

C++ Software Developer
Thomas Jefferson National Laboratory (JLab), Newport News, VA.   *Jul 2020 - Jan 2023*

- Coded a Geant4-based simulation for studying the optimal light guide length (range 0-10 cm) for the EM calorimeter used in the Electron-Ion-Collider (EIC) project. Link to GitHub.
- Used Machine Learning (ML) techniques to perform binary classification of thousands of signals from a data acquisition (DAQ) setup. Link to GitHub.
- Applied CERN ROOT framework (C++) to perform statistical analysis of a significant amount (over 100 GB) of the raw experimental data of the Kaon LT experiment at JLab. Link to GitHub.
- Utilized SLURM functionality on the High-Performance Computing (HPC) environment to execute a series of simulations in parallel. This reduced the wall time by more than 10 times.
- Set up data acquisition system that performs triggered waveform acquisition involving 3 devices - Tektronix oscilloscope, Network Attached Storage, and RedHat computer (SAMBA, Python, National Instruments NI-VISA library).
- Contributed 100+ shifts at Hall C at the Thomas Jefferson Particle Accelerator facility for the Pion LT project.

Software Developer · Postdoctoral Researcher
Catholic University of America (CUA), Washington, DC.   *Jul 2020 - Jan 2023*

- Programmed a Geant-4 computer simulation (C++, CMake, Eclipse IDE, gdb) to study the performance of a novel scintillation material for EIC, Brookhaven National Lab. Link to GitHub.
- Visualized energy deposition profiles and calculated energy resolutions for a variety of detector assemblies.
- Teaching experience. Mentoring students within a 3-month Research Experiences for Undergraduates (REU) program at the Physics Department at CUA.
- Enhanced debugging of the CERN library source code led to the publishing of more than 10 bug reports on the ROOT (C++) forum.

Software Developer · Research Assistant
Bowling Green State University (BGSU), Bowling Green, OH.   *Aug 2014 - May 2020*

- Assembled positron lifetime and Doppler spectrometers from ORTEC and Canberra (Mirion) fast electronic units. Utilized High-Purity Germanium Detectors (HPGe) and scintillation-based detector systems for single-photon counting.
- Defined and resolved novel kinetic equations of behavior of e+ and Ps atoms in solids, liquids, and nano-powders (Wolfram Mathematica).
- Developed three open-source programs (C++, CERN ROOT) for fitting and interpretation of the experimental spectra for above data acquisition systems (DAQ).
- Combination of the hardware and software skills allowed for:
  - Estimation of defect concentrations and grain sizes in solids.
  - Classification of defect types (vacancies, dislocations).
  - Characterization of the chemical decoration of defects.
- Developed website (Express.js, Gulp, Bootstrap) and visual identity for the SelimLab research group.

UI/UX Designer, Frontend Developer • Freelance   *Sep 2012 - May 2020*

- Made iOS application (Swift, UIkit, storyboards) for the [We.Team](#) messenger (more than 3k monthly downloads in AppStore). Participated in cloud-based messenger development with enhanced file sharing capabilities (HTML, React JS, SASS).
- Migrated the landing page for [Sweetbridge](#) company from WordPress to Jekyll static site generator (Ruby, CSS). This resulted in a 70% improvement in the page load time.
- Developed the website front-end (Angular.js, HTML, LESS) and iOS mobile application (Ionic) for the [Lili Social](#) network.
- Web design.
  - Designed logos, UI/UX prototypes (Figma, Sketch, Illustrator) and branding identity for over [10 different companies](#).
  - Converted numerous design assets and mockups into responsive HTML and CSS.
  - Mocked up and integrated dozens of cross-browser responsive email templates.

Web Designer, Full Stack Web Developer

[Gridnine Systems](#), Moscow, Russia.   *Apr 2011 - Aug 2014*

- Prototyped and designed interactive mockups for [Otixo](#) cloud file integrator (Balsamiq, Adobe Creative Suite). Utilized Google Web Toolkit (GWT) Model-View-Presenter (MVP) framework to develop application frontend (JavaScript, responsive CSS).
- Responsible for the front-end development of the [ATH American Express](#) – the largest travel management company in Russia (JavaScript, Backbone.js, and RequireJS). Increased the front-end load time by over 30%.
- Implemented image processing servlets on the backend to generate banners for five different social networks (PHP, ImageMagic).
- Wireframed and sliced to web pages numerous UI/UX mockups for web applications (Balsamiq, Photoshop, HTML and CSS).

Computer Science Teacher

[Phys-Tech College at MIPT](#), Moscow, Russia.   *Oct 2009 - May 2011*

- Provided instructions and guidance to high school students on the following computer courses: C/C++ programming, HTML, Adobe Photoshop and 3D Studio Max.

Research Scientist

[Institute for Theoretical and Experimental Physics (ITEP)](#), Moscow, Russia.   *Sep 2008 - Apr 2011*

- Application of positron lifetime spectroscopy for studying the radioactive-induced defects in steels. Monte-Carlo particle simulations with Fortran 95. Maintaining software for CAMECA tomographic atom probe (MSVC). Application of CERN ROOT libraries for fitting and analysis of experimental spectra.

Education

Bowling Green State University (BGSU) • OH, United States   *Aug 2014 - May 2020*
Ph.D. in Photochemical Sciences • GPA 3.423. [Dissertation](#): Novel developments in positron spectroscopy (PAS).

British Higher School of Art and Design (BHSAD) • Moscow, Russia   *Dec 2011 - Feb 2012*
Three-month intensive in Graphical Design and Visual Communications (illustration, lettering, brand identity).

Professional Networks

- Find examples of my code [on GitHub](#) (50+ repositories).
- Discover my professional contacts [on LinkedIn](#) (200+ connections).
- Check out my UI and UX design portfolio [on Dribbble](#) (50+ shots).

Relevant Interests

- Hosting an open-source project for keyboard remapping on Linux [300+ stars on GitHub](#).
- Developed a [RAMDisk plugin](#) for Linux that provides 50% increase in source code indexing time.
- Created two shared libraries for the ROOT data analysis framework [[1](#), [2](#)].